

2. Rejected claims 25 and 29-44 under 35 U.S.C. § 112, second paragraph, as being indefinite;

3. Rejected claims 22-27, 29-35 and 37-44 under 35 U.S.C. § 102(b) as being anticipated by

a. JP10077438 (claims 22-27, 29-35, and 37-44);

b. JP7118592 (claims 22-26, 29-30, 33, 35, 37-38, 40, 42 and 44);

c. EP600205 (claims 22-27, 29-30, 32, 38 and 42); and

4. Rejected claims 27, 28, 32 and 36 under 35 U.S.C. § 103(a) as being unpatentable over

a. JP10077438, JP7118592 and EP600205 any of which in view of US5510397 (“Okuda et al.”) (claim 28);

b. JP10077438 or JP7118592 either of which in view of US3087828 (“Linton”) (claim 36);

c. JP7118592 in view of JP09268270 (claims 27 and 32).

### **The Claimed Invention**

The claimed invention is, *inter alia*, an aqueous glittering ink composition comprising a metal coated inorganic pigment, a water-soluble resin, a water-soluble organic solvent and water. Significantly, the metal coated inorganic pigment is an inorganic pigment coated with a metal and/or metal oxide and has a reflecting surface or layer of metal.

### **The Double Patenting Provisional Rejection**

Claims 2, 4, 6, 8, 10, 12 and 14 of co-pending U.S. Patent Application Serial No. 09/523,619 have been canceled, thereby eliminating the predicate for this provisional rejection.

### **The Indefiniteness Rejection**

Claims 25, 29, 31, 33-35, and 38-44 have been amended in accordance with the Examiner's suggestions. No specific rejection has been made to the claims dependent on these claims (namely, 30, 32, 36 and 37.)

Applicants submit that the amendments to claims 25, 29, 31, 33-35, and 38-44 adequately traverse the rejection of both those claims and the remaining claims 30, 32, 36 and 37.

### **The Anticipation Rejection**

There is a difference between (1) an inorganic pigment coated with a metal and/or metal oxide and having a surface of a metal of the present invention and (2) a pearlescent pigment of the prior art

The pigment of the present invention is an inorganic pigment coated with a metal and/or metal oxide and having a surface or layer of metal, while a pearlescent pigment is typically mica coated with a metal oxide. The pigment of the present invention is a pigment in which incident light produces a metallic reflection regardless of whether a surface of metal is the outer surface or an inner surface. In the prior art pigment, since a surface is a metal oxide and the inner portion of particles is mica, the incident light hardly reflects on a surface of metal oxide and the light is refracted from a surface of metal oxide through the inner portion of the particles and permeates. Since the inner portion of the particles of a pearlescent pigment is mica, the light permeated from the surface of metal oxide is further refracted in the particles of mica, permeates, and again it permeates through the inner layer of metal oxide which is situated on the opposite surface of mica particles and outgoes to the outer portion of pigment particles. On the other hand, regarding the light that permeates through the metal oxide layer, a portion of the light is reflected on the mica surface in the inner portion of surface particles and this reflected light permeates

through the metal oxide layer and is refracted, thereafter outgoing from a surface of metal oxide to the outer portion of the particles. The pearlescent luster is a color produced by the difference in light path, or interference, between the light slightly reflecting on the surface of metal oxide with most of the incident light permeating in the inner portion of pigment particles and the said refracted light which is refracted and reflected in the inner portion of pigment particles. This effect is explained further in the attached text “Handprint: Interference Paints” (Exhibit A). ([URL:http://www.handprint.com/HP/WCL/pigmt4.html](http://www.handprint.com/HP/WCL/pigmt4.html)). A light reflection model of the present invention compared to a light interference model of a prior art pearlescent pigment is shown in Exhibit A. Therefore, since a pearlescent pigment is a pigment that merely provides pearlescent color, it is nothing but a “color” and even when it is mixed with other colorants, such as blue or red, it is realized as, for example, a blue-tinged pearlescent color or a red-tinged pearlescent color. On the other hand, in the pigment of the present invention with metallic reflection, metal reflection pieces are scattered in a blue color. These written marks are remarkably different from each other and it is impossible not to recognize them as different pigments.

The claims of the present application are directed to a metal coated inorganic pigment having a reflecting surface or layer of metal. Therefore, it is essentially different from the pigments of JP10077438, JP7118592 or EP600205, whose coated surface is a metal oxide and whose inner portion of the pigment particle is not a metal, such as, pearlescent pigment exemplified by mica, or the like, coated with titanium oxide or iron oxide.

When a pigment having a surface of a metal on an inner or outer surface of the pigment particles is used, a light is produced that is a metallic reflection on the inner surface of the particles or the outer surface of the particles and the pigment glitters with a reflection light. On the other hand, when the prior art pigment particles whose coated surface is coated with a metal

oxide, such as titanium oxide or iron oxide, and whose inner portion is mica, light does not reflect but incidents and is refracted partially in the inner portion instead, thereby merely providing a pearlescent luster to an ink.

In addition, regarding the pseudo plastic behavior, although the Examiner argues as “it is clear that the viscosity at 0.5 rpm will be greater than 1000 mPa•s which is the viscosity at 1 rpm”, it is not clear whether the exceeding degree falls within the range of about 1000 to 10000 mPa•s or not. The ink of JP10077438 is not identical to the ink of claims 22 to 27, 29 to 35, and 37 to 44. The ink of JP10077438 is an ink which realizes a pearlescent luster color and it is not an ink of the present invention which provides a glittering feeling and a spatial effect to a written mark thereby providing a written mark glittering like a star dust.

### **The Obviousness Rejections**

#### **Claim 28**

From the foregoing argument with regard to JP10077438, JP7118592 and EP600205, it is clear that the difference between the pearlescent pigment of those citations and the present claimed invention is not limited to an opacifying pigment. Therefore, Claim 28 is non-obvious.

#### **Claim 36**

Linton (US3087828) discloses that metal oxide is deposited on mica by a metal deposition. On the other hand, the present invention discloses metal coated inorganic pigment that is an inorganic pigment coated with a metal and/or metal oxide and having a reflecting surface or layer of metal. In such a metal coated surface, light produces a metal reflection on the surface and glitters with a reflection light, while a pigment particle whose inner portion is mica, light does not reflect but incidents and is refracted instead, merely developing a pearlescent luster color. Therefore, since the two pigments are totally different, Claim 36 is not obvious.

### **Claims 27 and 32**

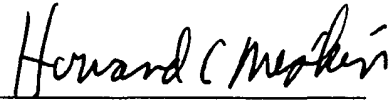
The difference between the disclosure of JP7118592 and the present claimed invention is not limited to the amount of a colorant in the claims. As stated above, the present invention discloses a metal coated inorganic pigment that is an inorganic pigment coated with a metal and/or metal oxide and having a reflecting surface or layer of metal, not a pearlescent pigment. Therefore, the written mark produced by using an ink in which a coloring pigment is added to a pearlescent pigment and the written mark produced by using an ink in which a coloring pigment is added to a metal coated inorganic pigment of the present invention having a reflecting surface or layer of metal are different. While the former is a written mark in which a certain specific color having a pearlescent luster is produced, the latter ink of the present invention realizes a written mark having a glittering feeling and a spatial effect in which scattered about reflection pieces reflect metallically with a glitter to the color of a colored pigment. Therefore, regarding the question of the concentration of a colorant, while the referenced disclosure is related to a color development concentration with a specific glossy color, in the case of the present invention, a metal coated inorganic pigment having a reflecting surface or layer of metal does not provide gloss to the color development of a colorant as may be seen in pearlescent pigment. Instead, the pigment of the present invention is a pigment that realizes a metal reflection with a glitter separately. Therefore, it corresponds to color development itself, which has no relation to gloss. Therefore, since the present invention does not disclose the production of an ink having a preferable color tone concentration and gloss even, even when the use of a colorant disclosed by JP09268270 in specific amount is considered, Claims 27 and 32 are not obvious for those skilled in the art with regard to the use of a colorant disclosed in the ink of JP7118592.

## CONCLUSION

In view of the foregoing amendments to the claims and remarks, reconsideration and allowance of the application is respectfully requested.

Dated: October 22, 2002

Respectfully submitted,

A handwritten signature in black ink, reading "Howard C. Miskin". The signature is written in a cursive style with a horizontal line underneath the name.

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

22. (Amended.) An aqueous glittering ink composition comprising a metal coated inorganic pigment, a water-soluble resin, a water-soluble organic solvent and water, wherein said metal coated inorganic pigment is an inorganic pigment coated with a metal and /or metal oxide and has a reflecting surface or layer of metal.

23. (Amended.) An aqueous glittering ink composition comprising a metal coated inorganic pigment, a water-soluble resin, a water-soluble organic solvent, water and a colorant, wherein said metal coated inorganic pigment is an inorganic pigment coated with a metal and /or metal oxide and has a reflecting surface or layer of metal.

25. (Amended.) An aqueous glittering ink composition as set forth in claim 22, wherein the metal coated inorganic pigment has a median diameter of about 5 - 100  $\mu\text{m}$ .

29. (Amended.) A writing tool having an ink container in which an aqueous glittering ink composition is packed, wherein said aqueous ink composition comprises an inorganic pigment coated with a metal and/or metal oxide and has a reflective surface or layer of metal and having a median diameter of about 5 - 100  $\mu\text{m}$ , a water-soluble resin, a water soluble organic solvent and water.

31. (Amended.) A writing tool as set forth in claim 29, wherein the viscosity of ink measured by an ELD[-type] viscometer [(J3° R14 [corn] cone; rotation speed: 0.5 rpm; 20°C)] is about 1000 to 10000 mPa•s.

33. (Amended.) A writing tool having an ink container that is made of a hollow tube equipped with a ball-point pen tip at one end, wherein [an] said ink container [in which] has an

aqueous glittering ink composition [is] packed therein, [and] said aqueous glittering ink composition [comprises] comprising an inorganic pigment coated with a metal and/or metal oxide and has a reflective surface or layer of metal and having a median diameter of about 5 -100  $\mu\text{m}$  and contained in about 1.0 – 40% by weight, a water-soluble resin contained in about 0.01 - 40% by weight and a water-soluble organic solvent contained in about 1.00 - 40% by weight relative to the total amount of the ink composition and water.

34. (Amended.) A writing tool as set forth in claim 33, wherein said water-soluble resin is a water-soluble thickening resin and the viscosity of the aqueous glittering ink measured by an ELD[-type] viscometer [(3° R14 [corn] cone; rotation speed: 0.5 rpm; 20°C)] is about 1000 to 10000 mPa•s.

35. (Amended.) A writing tool as set forth in claim 34, wherein said water-soluble thickening resin is a microbial polysaccharide or a derivative thereof, selected from the group consisting of pullulan, xanthan gum, welan gum, rhamsan gum, succinoglucan and dextran.

37. (Amended.) A writing tool as set forth in claim 33, wherein said inorganic pigment coated with metal oxide is aluminum metal coated with metal oxide and has a reflecting surface or layer of aluminum metal.

38. (Amended.) A method for using an aqueous glittering ink composition for a writing tool, the method comprising:  
providing an aqueous glittering ink composition which comprises an inorganic pigment coated with a metal having a median diameter of about 5 - 100  $\mu\text{m}$ , a water-soluble resin, a water-soluble organic solvent and water.



39. (Amended.) A method of claim 38, wherein the viscosity of said aqueous glittering ink measured by an ELD[-type] viscometer [(J3° R14 [corn] cone; rotation speed: 0.5 rpm; 20°C[])] is about 1000 to 10000 mPa•s.

40. (Amended.) A method for using an aqueous glittering ink composition for a writing tool, the method comprising:  
providing an aqueous glittering ink composition which comprises an inorganic pigment coated with a metal and/or metal oxide and has a reflecting surface or layer of metal and having a median diameter of about 5 - 100 µm, a water-soluble resin, a water-soluble organic solvent and water,  
packing said aqueous glittering ink composition into an ink container made of a hollow tube, and  
equipping a ball-point pen tip with said ink container.

41. (Amended.) A method of claim 40, wherein the viscosity of the aqueous glittering ink composition measured by an ELD[-type] viscometer [(J3° R14 [corn] cone; rotation speed: 0.5 rpm; 20°C[])] is about 1000 to 10000 mPa•s.

42. (Amended.) A method for using an aqueous glittering ink composition for a writing tool, the method comprising:  
providing an aqueous glittering ink composition which comprises  
an inorganic pigment coated with a metal and/or metal oxide and has a reflecting surface or layer of metal and having a median diameter of about 5 - 100 µm and contained in about 1.0 - 40% by weight,  
a water-soluble resin contained in about 0.01 - 40% by weight and  
a water-soluble organic solvent contained in about 1.00 - 40% by weight relative to the total amount of the ink composition.

43. (Amended.) A method of claim 42, wherein the viscosity of the aqueous glittering ink composition measured by an ELD[-type] viscometer [(J3° R14 [corn] cone; rotation speed: 0.5 rpm; 20°C[])] is about 1000 to 10000 mPa•s.

44. (Amended.) A method for using an aqueous glittering ink composition for a writing tool, the method comprising:  
providing an aqueous glittering ink composition which comprises  
an inorganic pigment coated with a metal and/or metal oxide and has a reflecting surface or layer of metal and having a median diameter of about 5 - 100 µm and contained in about 1.0 - 40% by weight,  
a water-soluble resin contained in about 0.01 - 40% by weight and  
a water-soluble organic solvent contained in about 1.0 - 40% by weight relative to the total amount of the ink composition;  
packing said aqueous glittering ink composition into an ink container made of a hollow tube, and  
equipping a ball point pen tip with said ink container.